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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,905	11/06/2006	Makiko Kitazoe	029567-00010	5377
4372 7590 06/19/2008 ARENT FOX LLP 1050 CONNECTICUT AVENUE, N.W. SUITE 400 WASHINGTON, DC 20036				
EXAMINER				
CHEN, KEATH T				
ART UNIT		PAPER NUMBER		
1792				
NOTIFICATION DATE		DELIVERY MODE		
06/19/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com
IPMatters@arentfox.com
Patent_Mail@arentfox.com

Office Action Summary

Application No.

10/591,905

Applicant(s)

KITAZOE ET AL.

Examiner

Keath T. Chen

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1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 10-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's response, filed on 03/12/2008, in response to the first office action mailed on 12/12/2007, did not amend the claims.

Election/Restrictions

2. Applicant's did not respond to the election/restriction in the reply filed on 03/12/2008. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election based on phone conversation on 11/19/07, elections of invention I, claims 1-9, **without traverse** (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35 U.S. Code not included in this action can be found in a prior Office action.

3. **Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibashi (US 6375756, hereafter '756), in view of Bridges (US 5012868, hereafter '868) and Reale (US 5451754, hereafter '754).**

'756 teaches some limitations:

Claim 1: A self-cleaning catalytic chemical vapor deposition apparatus (Fig. 1, col. 4, line 59) which forms a thin film by using the catalytic action of a catalytic body (#3, col. 5, lines 11-17) which is resistance heated (by power source #30, col. 5, lines 11-13) within a reaction chamber capable of being evacuated to a vacuum (col. 4, line 60). Applicant's claimed requirements "which removes an adhering film which has

adhered to the interior of the reaction chamber without etching the catalytic body itself on the basis of a radical species generated when an introduced cleaning gas comes into contact with the resistance heated catalytic body and is decomposed, the bias voltage applied to the catalytic body, and a polarity of the bias voltage

" are considered intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Claim 2: The self-cleaning catalytic chemical vapor deposition apparatus according to claim 1, characterized in that in addition to the aforementioned constitution, a radical species generator (plasma generation, col. 7, lines 45-48) which decomposes the cleaning gas into a radical species and introduces the radical species into the reaction chamber is provided.

'756 further recognized the hot element reacts with the cleaning gas (col. 2, lines 52-63), particularly corrosion occurs below 2000° C (col. 6, lines 19-26).

'756 does not teach the other limitations of

Claim 1: The apparatus comprises a power supply to apply a bias voltage to the catalytic body and a changeover switch which changes the polarity of the bias voltage to be applied.

Claim 9: The self-cleaning catalytic chemical vapor deposition apparatus according to claim 1, characterized in that there is provided a monitoring device which detects the occurrence of etching of the catalytic body itself on the basis of electric resistance of the catalytic body.

'868 is an analogous art in the field of corrosion inhibition in a heating electrode (abstract), particularly in providing maximum corrosion protection over an extended working life at minimum cost (col. 3, lines 54-59). '868 teaches by applying a DC bias voltage to the heating circuit to inhibit corrosion (col. 4, lines 1-4) and a switch (#238, Fig. 3) to adjust positive or negative polarity (col. 8, lines 37-40) and an ability to maintain neutral potential (col. 9, lines 21-26). '868 further provides a current sensor (#55 in Fig. 1 or #251, Fig. 3, col. 9, lines 51-62) to control the corrosion inhibition polarity.

'754 is an analogous art in the field of controlling charge of substrate (abstract) particularly in sputtering metal film (col. 3, lines 52-53). '754 teaches a changeover switch which change polarity of the bias voltage, including ground, applied to the shield (col. 4, lines 30-39) to control the charge deposited on the substrate (#14).

At the time the invention was made, it would have been obvious to a person having ordinary skill in the art to have combined '868 and '754 with '756. Specifically, to

have applied a bias voltage, as taught by '868, to the hot element (#3) in the apparatus of '756, and furthermore to have adopted the bias voltage switch as taught in Fig. 1 of '754 to switch the polarity as taught by '868. Furthermore, to have adopted a DC current sensor, as taught by '868, to control the polarity of inhibition. This current sensor would have been responsive to the resistance of the catalytic body (hot element).

The motivation would have been to inhibit corrosion as taught in both '756 (col. 6, lines 19-26) and '868 (col. 4, lines 1-4) and to provide polarity switch capability as taught by '868 (col. 8, lines 37-40 and col. 9, lines 21-26).

The apparatus of the above combination would have the capability of supplying various gases and setting polarity according to the gases species of the claim limitations of claims 3-8 (all intended use).

Response to Arguments

Applicant's arguments filed 03/12/2008 have been fully considered but they are not persuasive.

4. In regarding to specification objection, applicant's clarification, see the last paragraph of page1 clarifies the record.
5. In regarding to 35 USC 112 rejection, see the first three complete paragraphs of page 2, applicant argument is that applicant's use of "suppress" means "totally eliminate". This is accepted.
6. In regarding to 35 USC 103(a) rejection based on Ishibashi ('756), Bridges ('868), and Reale ('754) of claims 1-9, see the last paragraph of page 2 to page 4, applicant

argument is that a) '868 teaches maintaining a DC bias current, and therefore teaches away from changing the polarity of the bias voltage; b) '868 is non-analogous art and office did not provide adequate motivation; c) '754's change-over switch cannot be combined because '868 teaches maintaining a constant voltage.

These arguments are found not persuasive:

a) while '868 teaches maintaining a DC bias current, it also disclose such bias current level depends on other operating conditions, such as heating current in '868 devices (col. 3, lines 15-16). In addition, as discussed on last paragraph of page 7 of the first office action, Fig.3 has a switch for positive and negative polarity (col. 8, lines 37-40). Therefore, '868 does not teach away from changing the polarity of the bias voltage.

b) As discussed on last paragraph of page 7 of the first office action, the analogy between '868 and '756 is corrosion inhibition, like the applicant admission, applying voltage to prevent corrosion is well known in the art and the analogy is clear. The motivation to combine '756 and '868 is explained at the second last paragraph of page 8 of the first office action: The motivation would have been to inhibit corrosion as taught in both '756 (col. 6, lines 19-26) and '868 (col. 4, lines 1-4). The motivation to combine with '754's changeover switch is to provide polarity switch capability as taught by '868 (col. 8, lines 37-40 and col. 9, lines 21-26).

To further clarify, in col. 9, lines 21-26 teaches neutral and small negative potential while in most situation a positive potential is applied (col. 2, lines 45-66).

c) Applicant's deduction of '868 teaches maintaining a constant voltage is far from the facts. In addition to the citations above, '868 is to solve the problem associated with maintaining a constant voltage (see, for example, col. 3, lines 8-13).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keath T. Chen whose telephone number is 571-270-1870. The examiner can normally be reached on M-F, 8:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. T. C./
Examiner, Art Unit 1792
/Rudy Zervigon/
Primary Examiner, Art Unit 1792